Hogg and others, 1996 Data Set 31

Reference: Hogg, A.J.C., A.W. Mitchell, and S. Young, 1996, Predicting well productivity from grain size analysis and logging while drilling: Petroleum Geoscience, v. 2, n. 1, p. 1-15.

Authors' affiliation: BP Exploration Operating Company Ltd.

Age: Triassic

Formation: Sherwood Sandstone Group

Location: Wytch Farm Field, Hampshire Basin, Dorset, southern England, United Kingdom

Wells: three wells: 98/6-7, L98/6-F13, and L98/6-L3

Depth range: approximately 5,200 feet sub-sea

Depositional Setting: "a succession of heterogeneous, arkosic, fluvial, red-bed sandstones deposited by streams and sheetfloods in a semiarid environment."

Lithology: "the Sherwood Sandstone is arkosic with mean K-feldspar content of 33% and low proportions of ductile lithic grains. Texturally, the sandstones range from coarse silt (40 micrometers) to upper coarse sand (900 micrometers) grade with an inverse relationship between grain size and detrital clay content which can be as great as 69%. The sandstones are poorly to well sorted."

Grain Size: The authors determined that grain size is a primary control on permeability and devised statistical equations relating permeability to porosity for four grain size ranges (very fine, fine, medium, and coarse).

Alteration: "The principal cements are K-feldspar overgrowths, calcite and anhydrite."

Production: oil and gas

Core measurement conditions: not stated.

Data entry: manual entry from Figure 6 of the referenced paper. (Horizontal and vertical scales are unequally spaced in Figure 6.)